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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/800,300	03/11/2004	James W. Thompson	083277 308345	8273

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EXAMINER

JONES, DIANE ELIZABETH

ART UNIT	PAPER NUMBER
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2862

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/800,300

Applicant(s)

THOMPSON ET AL.

Examiner

Diane E. Jones

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Parkinson et al. (5430379).

3. With respect to Claim 1, Parkinson et al. disclose a method of locating a selected type of passive electronic marker (adapter to fit conductor locators (Col. 4, Lines 29-34) to make an electronic marker locator for passive markers (Col. 5, Lines 18-24 and Fig. 3, Item 46)); which comprises:

transmitting a signal at a frequency associated with a selected type of passive electronic marker (one of five frequencies associated with utility type (Col. 2, Lines 64-68) is transmitted to marker (Col. 5, Lines 31-38));

receiving a signal from a marker (receive antenna picks up the re-radiated marker signal, Col. 5, Lines 38-41 and passes the signal to the wireless interface of the marker locator, Col. 5, Lines 44-48); and

determining a frequency distribution of the received signal (marker detector circuitry conditions output signal by band pass filter or sends to frequency modulator adjusted to desired frequency, Col. 5, Lines 47-65).

4. With respect to Claim 2, Parkinson et al. disclose the invention as shown in Claim 1 above, and further teach indicating the presence of the selected type of passive electronic marker if, responsive to said determining, the frequency with the greatest amplitude is the frequency associated with the selected type of passive electronic marker (circuitry of the marker locator detects frequency of marker (Col. 5, Lines 20-24) and the modulator sends signal to the conductor locator, which signal strength can be interpreted by the user (Col. 5, Line 64 to Col. 6, Line 3), as the information is displayed on the indicator or by speaker (Col. 5, Lines 10-17)).

5. With respect to Claim 4, Parkinson et al. disclose the invention as shown in Claim 1 above, and further teach that the determining comprises performing synchronous detection on a signal received during said receiving (synchronization of the transmit and receive cycles, Col. 5, Lines 47-48).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 3, 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. in view of Balkman (5093622).

8. With respect to Claim 3, Parkinson et al. disclose the invention as shown in Claim 1 above, and further teach the locator is similar to the locator of Balkman, (Col. 4, Lines 38-41).

Balkman teaches indicating the presence of no passive electronic marker if, responsive to said determining (determination is by a dual conversion receiver, Col. 5, Lines 26-51), the frequency with the greatest amplitude is not the frequency associated with the selected type of passive electronic marker (the display is a bar indicator where boxes are gray when no signal above the threshold frequency is received., Col. 6, Lines 27-34).

9. With respect to Claim 5, Parkinson et al. and Balkman disclose the invention as shown in Claim 4 above, and Parkinson et al. further teach that the adaptor circuitry conditions the output signal to match the locator circuitry (Col. 5, Lines 47-52).

Parkinson et al. lack the teaching that performing synchronous detection on the received signal comprises converting the received signal to a digital and sequentially processing the digital signal with in-phase and phase-shifted reference frequencies.

Balkman teaches that the locator converts the received signal to a digital signal (Col. 5, Lines 49-51) and sequentially processes the digital signal with in-phase and phase-shifted reference frequencies (quadrature processing, Col. 5, Lines 51-57).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. in view of Howell (5754049).

11. With respect to Claim 6, Parkinson et al. disclose the invention as shown in Claim 1 above, and further teach that the marker locator of the '379 patent is an adaptor to a wide variety of conductor locators (Col. 4, Lines 29-39).

Parkinson et al. lacks the teaching that the determining comprises performing a Fourier Transform on the received signal.

Howell teaches a conductor locator where the determining comprises performing a Fourier Transform on a signal received during said receiving (signals from antenna are subjected to a fast fourier transform analysis in a FFT analyzer, Col. 5, Lines 31-37).

It would have been obvious to one skilled in the art at the time of the invention to use the conductor locator of Howell with the adapter of Parkinson et al. since it is one of the above variety of locators as taught by Parkinson et al.

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12. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. in view of Parakulam et al. (6407550 B1).

13. With respect to Claim 7, Parkinson et al. disclose the invention as shown in Claim 1, and further teach that the marker locator of the '379 patent is an adaptor to a wide variety of conductor locators (Col. 4, Lines 29-39).

Parkinson et al. lack the teaching that the determining comprises passing a signal received during receiving through parallel narrow-band filters.

Parakulum et al. teach a locator (line locator, Col. 5, Lines 23-24) where the determining comprises passing a signal received during receiving through parallel narrow-band filters (filter 704 passes signals selected from frequencies 9.8k Hz, etc., Col. 10, Lines 6-15 and Fig. 7A, Item 704 and Fig. 7B, Items 714-716, 720-721).

It would have been obvious to one skilled in the art at the time of the invention to use the conductor locator of Parakulum et al. with the adapter of Parkinson et al. since it is one of the above variety of locators as taught by Parkinson et al.

14. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. in view of Doany (5471143, S/N 11383).

15. With respect to Claim 8, Parkinson et al. disclose a system for locating a selected type of passive electronic marker (adapter to fit conductor locators (Col. 4,

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Lines 29-34) to make an electronic marker locator for passive markers (Col. 5, Lines 18-24 and Fig. 3, Item 46)); said system comprising:

a transmitter for transmitting a signal at a frequency associated with a selected type of passive electronic marker (one of five frequencies associated with utility type (Col. 2, Lines 64-68) is transmitted to marker (Col. 5, Lines 31-38));

a receiver for receiving a signal from a marker (receive antenna picks up the re-radiated marker signal, Col. 5, Lines 38-41 and passes the signal to the wireless interface of the marker locator, Col. 5, Lines 44-48); and,

a processor coupled to the receiver (the wireless interface of the marker detector circuitry conditions output signal and sends it to the receive circuitry of the associated conductor locator through a modulator (Col. 5, Lines 44-68 and Fig. 3, Items 48, 64 and 12).

Parkinson et al. lacks the teaching of a processor coupled to the receiver for determining a frequency distribution of the received signal, but indicates that the adapter is designed for use with the locator of Doany (Col. 5, Lines 52-56, the '383 patent referenced is the Doany patent) or with a wide variety of locators

Doany teaches a conductor locator (cable locator, Col. 3, Line 7) with a processor coupled to the receiver (sensors connected to signal processing unit, Col. 3, Lines 6-8 and Fig. 2, Items 12, 14, 16) for determining a frequency distribution of the received signal (received signal is amplified and subtractively combined and passed through a bandpass filter, Col. 3, Lines 41-47).

16. With respect to Claim 9, Parkinson et al. and Doany disclose the invention as shown in Claim 1 above and Doany further teaches display means (indicator coupled to signal processing unit, Col. 3, Lines 8-19 and Fig. 2, Items 16 and 18) for indicating presence of the selected type of passive electronic marker if a frequency with the greatest amplitude determined by the processor is associated with the selected type of passive electronic marker (bandpass filter is adjusted to the desired output frequency (Parkinson et al., Col. 5, Lines 52-56), modulator with output antenna sends signal to the conductor locator (Parkinson et al., Col. 5, Line 66 to Col. 6, Line 3) which contains the signal processor and indicator unit as shown above.

17. With respect to Claim 10, Parkinson et al. and Doany disclose the invention as shown in Claim 8 above, and Parkinson et al. teaches that the processor includes means for performing synchronous detection on the received signal (synchronization of the transmit and receive cycles, Col. 5, Lines 47-48).

18. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. and Doany in view of Smith (3471772).

19. With respect to Claim 11, Parkinson et al. and Doany disclose the invention as shown in Claim 10 above but lack the teaching that performing synchronous detection on the received signal includes a digital signal processor synchronous detector.

Smith teaches an object locator which determines range of the object as well as the size of the object (Col. 2, Lines 1-7) which has a processor (Fig. 1, Items 17-23, 30-31, 35-36). Smith further teaches that the processor includes a digital signal processor synchronous detector (Fig. 2, Items 22-23).

It would have been obvious to one skilled in the art at the time of the invention to use the synchronous detection circuit of Smith in the marker locator of Parkinson and Doany to receive the benefit of determining the range of the marker.

20. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. in view of Howell (5754049).

21. With respect to Claim 12, Parkinson et al. and Doany disclose the invention as shown in Claim 8 above, but Doany lacks the teaching that the processor includes means for performing a Fourier Transform on the received signal.

Howell teaches a conductor locator where the processor (signal processing circuitry, Col. 5, Lines 27-29) comprises performing a Fourier Transform on a signal received during said receiving (signals from antenna are subjected to a fast fourier transform analysis in a FFT analyzer, Col. 5, Lines 31-37).

It would have been obvious to one skilled in the art at the time of the invention to use the conductor locator of Howell, in place of the one of Doany, with the adapter of Parkinson et al. since it is one of a wide variety of locators as taught by Parkinson et al. (Col. 4, Lines 29-39).

22. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Parkinson et al. in view of Parakulum et al. (6407550B1).

23. With respect to Claim 13, Parkinson et al. and Doany disclose the invention as shown in Claim 8 above, but Doany lacks the teaching that the processor includes parallel narrow-band filters.

Parakulum et al. teach a locator (line locator, Col. 5, Lines 23-24) where the processor (detection circuit 700, Col. 9, Line 35 and Fig. 7A) comprises passing a signal received during receiving through parallel narrow-band filters (filter 704 passes signals selected from frequencies 9.8kHz, 82 kHz etc., Col. 10, Lines 6-15 and Fig. 7A, Item 704 and Fig. 7B, Items 714-716, 720-721).

It would have been obvious to one skilled in the art at the time of the invention to use the conductor locator of Parakulum et al. with the adapter of Parkinson et al. since it is one of the above variety of locators as taught by Parkinson et al.

Conclusion

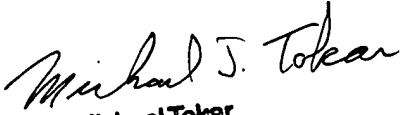
24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 2005/0159929A1 as disclosing an electronic marker locator.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diane E. Jones. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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